

Alizarin complexone: an interesting ligand for designing TiO₂ - hybrid nanostructures

Yesica Di Iorio,^a R. Parra,^b K. Szaciłowski,^{c,d} and María A. Grela^{a,}*

^a Departamento de Química, Universidad Nacional de Mar del Plata, Funes 3350,
B7602AYL Mar del Plata, Argentina.

^b Instituto de Investigaciones en Ciencia y Tecnología de Materiales (INTEMA, UNMdP-
CONICET), J.B. Justo 4302, B7608FDQ Mar del Plata, Argentina.

^c AGH Akademia Górniczo-Hutnicza, Wydział Metali Nieżelaznych, al. A. Mickiewicza
30, 30-059 Kraków, Poland.

^d Wydział Chemii, Uniwersytet Jagielloński, ul. R. Ingardena 3, 30-060 Kraków, Poland.

magrela@mdp.edu.ar

FIGURE 1

Differences observed upon ligand chemisorption for alizarin and alizarin complexone molecules free and chemisorbed to TiO_2 .

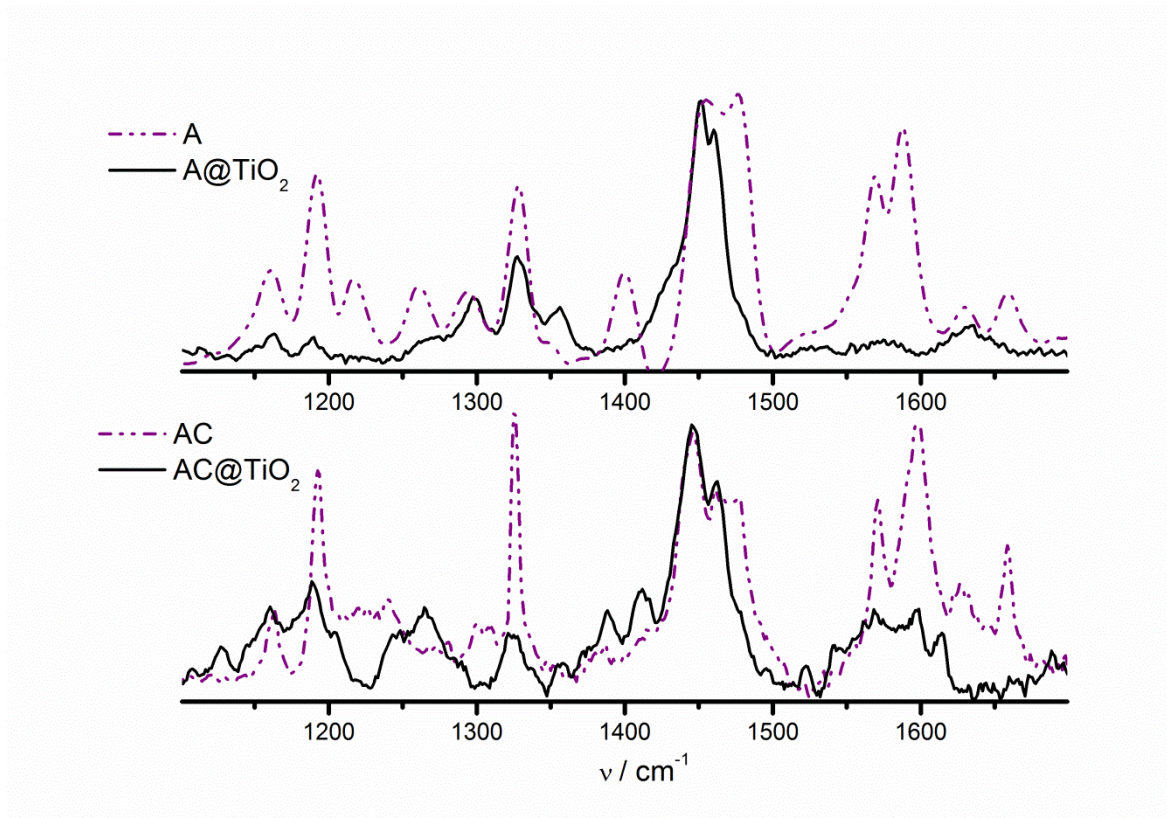


Figure 1: Comparison between SERS spectra of: Upper: free A (dash dotted line) and A@TiO_2 (solid line). Lower: free AC (dash dotted line) and AC@TiO_2 (solid line). Both complexes were prepared at pH 1.5 using sols 30 mM of TiO_2 ; 0.9 mM AC. Laser excitation wavelength 514nm.

FIGURE 2

Quantum chemical calculations for Raman spectra considering the attachment of the alizarin complexone to TiO_2 through (A) the catechol moiety, (B) the (methylimino) diacetate group and an adjacent aromatic hydroxyl group and (C) the carbonyl and OH groups.

